



55" 4K2K one page spec

55"4K2K Preliminary Spec:

	T550QVN01.1
Resolution	3840 x 2160
Aspect Ratio	16:9
Pixel Pitch	0.315 x 0.315
Brightness	400
Contrast Ratio	5000:1
Display Color	10bit
Frame Rate	120Hz
I/F	V by One (41 + 51pin)
Color Gamut	72
Module Chromaticity (X,Y)	(0.280, 0.290)
B/L Power (w)	150W
View Angle	89/89/89/89
BLU	Edge-LED
Outline	1242.6(H)*715.4(V)
Thickness	16.2
Bezel width U/L/R/D	14/12/12/12
Weight	18,500 g

T55” 4K2K Pin Assignment

V by One CN (41Pin) : FI-RE51S-HF (JAE)

PI	N	Symbol	Description	PI	N	Symbol	Description
1		GND	Ground	21		Rx11n	V-by-One HS Data Lane 11
2		GND	Ground	22		Rx11p	V-by-One HS Data Lane 11
3		GND	Ground	23		GND	CML Ground
4		GND	Ground	24		GND	CML Ground
5		GND	Ground	25		Rx12n	V-by-One HS Data Lane 12
6		NC	AUO Internal Use Only	26		Rx12p	V-by-One HS Data Lane 12
7		NC	AUO Internal Use Only	27		GND	CML Ground
8		GND	CML Ground	28		GND	CML Ground
9		Rx8n	V-by-One HS Data Lane 8	29		Rx13n	V-by-One HS Data Lane 13
10		Rx8p	V-by-One HS Data Lane 8	30		Rx13p	V-by-One HS Data Lane 13
11		GND	CML Ground	31		GND	CML Ground
12		GND	CML Ground	32		GND	CML Ground
13		Rx9n	V-by-One HS Data Lane 9	33		Rx14n	V-by-One HS Data Lane 14
14		Rx9p	V-by-One HS Data Lane 9	34		Rx14p	V-by-One HS Data Lane 14
15		GND	CML Ground	35		GND	CML Ground
16		GND	CML Ground	36		GND	CML Ground
17		Rx10n	V-by-One HS Data Lane 10	37		Rx15n	V-by-One HS Data Lane 15
18		Rx10p	V-by-One HS Data Lane 10	38		Rx15p	V-by-One HS Data Lane 15
19		GND	CML Ground	39		GND	CML Ground
20		GND	CML Ground	40		NC	AUO Internal Use Only
				41		GND	Ground

V by One CN (51Pin) : FI-RE51S-HF (JAE)

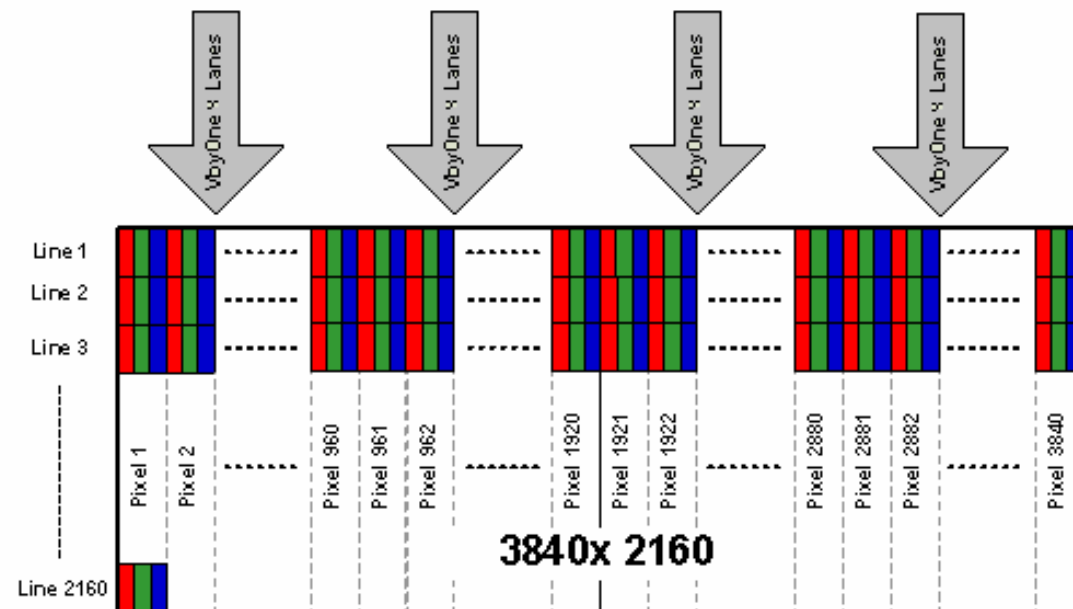
PIN	Symbol	Description	PIN	Symbol	Description
1	NC	NC PIN	26	GND	CML Ground
2	NC	NC PIN	27	Rx2n	V-by-One HS Data Lane 2
3	NC	AUO Internal Use Only	28	Rx2p	V-by-One HS Data Lane 2
4	NC	NC PIN	29	GND	CML Ground
5	NC	NC PIN	30	GND	CML Ground
6	NC	NC PIN	31	Rx3n	V-by-One HS Data Lane 3
7	NC	NC PIN	32	Rx3p	V-by-One HS Data Lane 3
8	NC	NC PIN	33	GND	CML Ground
9	NC	AUO Internal Use Only	34	GND	CML Ground
10	NC	NC PIN	35	Rx4n	V-by-One HS Data Lane 4
11	GND	Ground	36	Rx4p	V-by-One HS Data Lane 4
12	GND	Ground	37	GND	CML Ground
13	GND	Ground	38	GND	CML Ground
14	GND	Ground	39	Rx5n	V-by-One HS Data Lane 5
15	GND	Ground	40	Rx5p	V-by-One HS Data Lane 5
16	HTPDN	Hot plug detect	41	GND	CML Ground
17	LOCKN	Lock detect	42	GND	CML Ground
18	GND	CML Ground	43	Rx6n	V-by-One HS Data Lane 6
19	Rx0n	V-by-One HS Data Lane 0	44	Rx6p	V-by-One HS Data Lane 6
20	Rx0p	V-by-One HS Data Lane 0	45	GND	CML Ground
21	GND	CML Ground	46	GND	CML Ground
22	GND	CML Ground	47	Rx7n	V-by-One HS Data Lane 7
23	Rx1n	V-by-One HS Data Lane 1	48	Rx7p	V-by-One HS Data Lane 7
24	Rx1p	V-by-One HS Data Lane 1	49	GND	CML Ground
25	GND	CML Ground	50	NC	AUO Internal Use Only
© 2010 AU Optronics Corporation – Proprietary and Confidential			51	NC	AUO Internal Use Only

T-CON Power Pin Assignment:

LCD Power CN (12Pin) : A2010WR0-12PS-SHP (JWT)

PIN	Symbol	Description
1	PWR Power V12 IN	PWR Power V12 IN
2	PWR Power V12 IN	PWR Power V12 IN
3	PWR Power V12 IN	PWR Power V12 IN
4	PWR Power V12 IN	PWR Power V12 IN
5	PWR Power V12 IN	PWR Power V12 IN
6	NC	NC PIN
7	NC	NC PIN
8	GND Ground	GND Ground
9	GND Ground	GND Ground
10	GND Ground	GND Ground
11	GND Ground	GND Ground
12	GND Ground	GND Ground

4K2K 2D Input Data Format:



Note: Normal pixel data mapping..

2D Mode Pixel Mapping:..

Pixel No. ₁	Pixel 1 ₁			Pixel 2 ₁			Pixel 3 ₁			⋮ ₁		Pixel 3840 ₁		
Line 1 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁
Line 2 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁
Line 3 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁
Line 4 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁
Line 5 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁
Line 6 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁
⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁	⋮ ₁
Line 2158 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁
Line 2159 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁
Line 2160 ₁	R1 ₁	G1 ₁	B1 ₁	R2 ₁	G2 ₁	B2 ₁	R3 ₁	G3 ₁	B3 ₁	R4 ₁	⋮ ₁	R3840 ₁	G3840 ₁	B3840 ₁

V-By-One Lanes of Pixel Data:

	Lane1	Lane2	Lane3	Lane4
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line1	pixel1	pixel2	pixel3	pixel4
	pixel5	pixel6	pixel7	pixel8
	...	...	...	...
	pixel957	pixel958	pixel959	pixel960
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line2	pixel1	pixel2	pixel3	pixel4
	pixel5	pixel6	pixel7	pixel8
	...	...	...	...
	pixel957	pixel958	pixel959	pixel960
...	...	...	...	...
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line2160	pixel1	pixel2	pixel3	pixel4
	pixel5	pixel6	pixel7	pixel8
	...	...	...	...
	pixel957	pixel958	pixel959	pixel960

	Lane5	Lane6	Lane7	Lane8
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line1	pixel961	pixel962	pixel963	pixel964
	pixel965	pixel966	pixel967	pixel968
	...	...	...	...
	pixel1917	pixel1918	pixel1919	pixel1920
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line2	pixel961	pixel962	pixel963	pixel964
	pixel965	pixel966	pixel967	pixel968
	...	...	...	...
	pixel1917	pixel1918	pixel1919	pixel1920
...	...	...	...	...
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line2160	pixel961	pixel962	pixel963	pixel964
	pixel965	pixel966	pixel967	pixel968
	...	...	...	...
	pixel1917	pixel1918	pixel1919	pixel1920

	Lane9	Lane10	Lane11	Lane12
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line1	pixel1921	pixel1922	pixel1923	pixel1924
	pixel1925	pixel1926	pixel1927	pixel1928
	...	...	...	...
	pixel2877	pixel2878	pixel2879	pixel2880
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line2	pixel1921	pixel1922	pixel1923	pixel1924
	pixel1925	pixel1926	pixel1927	pixel1928
	...	...	...	...
	pixel2877	pixel2878	pixel2879	pixel2880
...	...	...	...	...
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line2160	pixel1921	pixel1922	pixel1923	pixel1924
	pixel1925	pixel1926	pixel1927	pixel1928
	...	...	...	...
	pixel2877	pixel2878	pixel2879	pixel2880

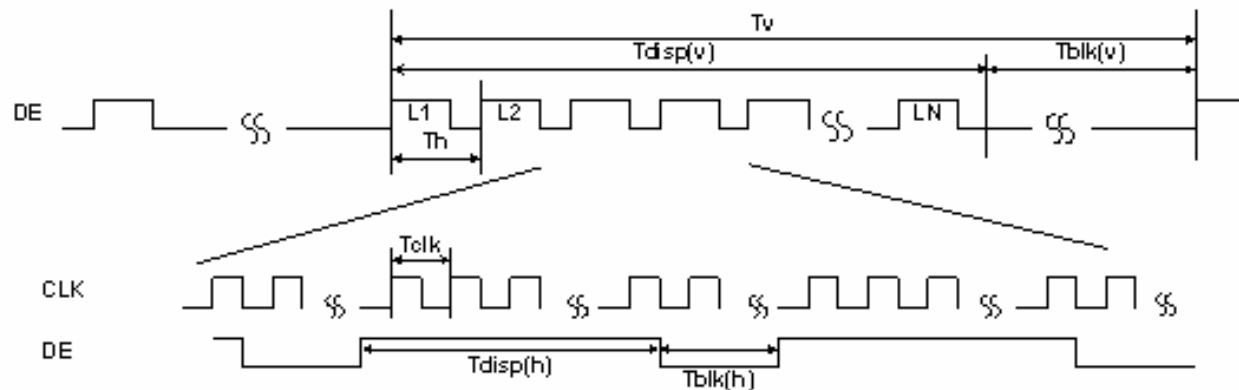
	Lane13	Lane14	Lane15	Lane16
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line1	pixel2881	pixel2882	pixel2883	pixel2884
	pixel2885	pixel2886	pixel2887	pixel2888
	...	...	...	...
	pixel3837	pixel3838	pixel3839	pixel3840
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line2	pixel2881	pixel2882	pixel2883	pixel2884
	pixel2885	pixel2886	pixel2887	pixel2888
	...	...	...	...
	pixel3837	pixel3838	pixel3839	pixel3840
...	...	...	...	...
Blank	FSBS	FSBS	FSBS	FSBS
	FSBP	FSBP	FSBP	FSBP
	FSBE_SR	FSBE_SR	FSBE_SR	FSBE_SR
Line2160	pixel2881	pixel2882	pixel2883	pixel2884
	pixel2885	pixel2886	pixel2887	pixel2888
	...	...	...	...
	pixel3837	pixel3838	pixel3839	pixel3840

Signal Timing Specification:

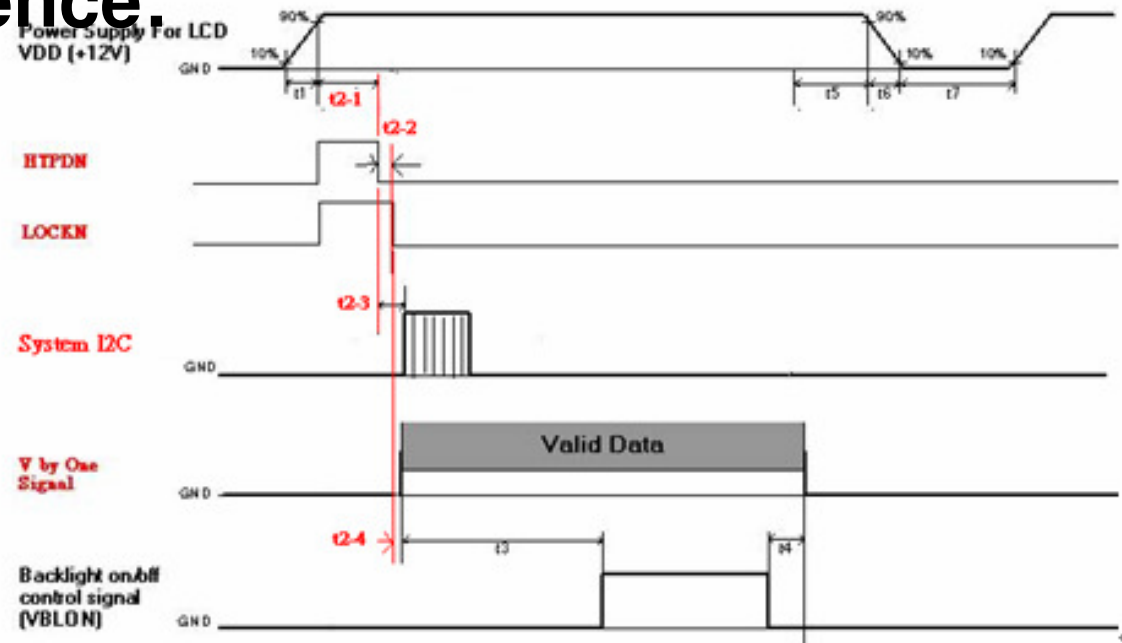
4K2K (3840x2160) V-by-One Each Lane Timing Spec. (240x2160 @120Hz x16Lanes)

Type	Item	Symbol	Min	Typ	Max	Unit
Vertical Section	Period	T_v	2172	2200	2244	Th
	Active	$T_{disp(v)}$	2160			Th
	Blanking	$T_{blk(v)}$	12	40	-	Th
Horizontal Section	Period	T_h	280	290	300	Tclk
	Active	$T_{disp(h)}$	240			Tclk
	Blanking	$T_{blk(h)}$	40	50	-	Tclk
Frequency	Clock	T_{clk}		76.48	78.125	MHz

3.4 Signal Timing Waveforms



Power Sequence:



Parameter	Values			Unit
	Min.	Type.	Max.	
t1	0.4	--	30	ms
t2-1	TBD	--	TBD	ms
t2-2	--	--	--*1	ms
t2-3	60	--	--	ms
t2-4			1	ms
T3	TBD	--	--	ms
t4	0*2	--	--	ms
t5	0	--	--	ms
t6	--	--	--*3	ms
t7	500	--	--	ms